REMARKS

Claims 1-9, 16-22, 54-80 are pending. The Office Action mailed October 23, 2003 has been carefully considered. Applicants appreciate that the Examiner has allowed Claims 1-9 and 16-22. Applicants request that the Examiner consider the above amendments and the following remarks, and pass the application to allowance.

Response to 35 U.S.C. §102(b) Rejections:

Claims 54-57, 60, 61, 63, and 64 were rejected under 35 U.S.C. §102(b) as being anticipated by Nonnenmann (U.S. Patent 4,647,435).

Nonnenmann relates to a matrix for a catalytic reactor used for exhaust gas purification in internal combustion engines. The matrix includes corrugated strips of sheet steel that are coatable with catalyst material. The sheets are folded to produce several layers in a tubular housing which is traversed by a flow of exhaust gases. The individual layers are part of a continuous length or strip of sheet steel which is folded in a meandering or serpentine fashion.

Claim 54 recites a method of producing a multilayer metal foil product. The method includes combining a plurality of previously patterned continuous metal foil layers to form an advancing continuous stack of spaced apart metal foil layers; scoring or creasing the advancing continuous stack of spaced apart metal foil layers across at least a portion of the width of the stack at predetermined intervals wherein the score or crease alternates in a left and a right direction; causing the continuous stack of spaced apart metal foil layers to fold in alternating directions at said scores or creases; and piling the alternately folding stack in a zigzag fashion to form a z-fold pack of the continuous stack of spaced apart metal foil layers.

In Nonnenmann, "the strip of FIG. 6 is formed of two flat steel sheets 1 and 1' with openings or cutouts 2 and an interposed corrugated sheet 3. The sheets 1, 1' and 3 lie loose on each other and are not brazed before folding." Col. 3, lines 32-34. Furthermore, in Nonnenmann, "[t]o simplify the manufacuturing process, the sheets utilized for forming

the matrix are provided with preweakened buckling zones at the folding sites by, for example, perforations in the sheet material. Thus, production of a matrix according to this invention wherein the individual layers are folded over, for example, in a zigzag pattern, can be achieved in the same manner as an endless length of computer paper is folded after exiting from a printer when it is dropped vertically into a chute or other paper receiving apparatus." Col. 2, lines 7-16.

Nonnenmann, however, does not teach or suggest scoring or creasing the advancing continuous stack of spaced apart metal foil layers across at least a portion of the width of the stack at predetermined intervals. In Nonnenmann, the sheets 1 and 1' are provided with "openings or cutouts" or "preweakened buckling zones," rather than scoring or creasing the advancing stack. In addition, the preweakened buckling zones are openings or cutouts which would not produce a multilayer metal foil as described by the present invention. The preweakened buckling zones are also randomly positioned and are not at "predetermined intervals" as recited in Claim 54. Accordingly, since Nonnenmann does not teach or suggest scoring or creasing the advancing continuous stack of spaced apart metal foils, Claim 54 should be allowable.

Claims 55-57, 60 and 61 are dependent from Claim 54 and should be allowable for the reasons set forth above as to Claim 54.

Claim 63 recites a method of producing a multilayer metal foil product. The method includes combining a plurality of continuous flat metal foil layers to form an advancing continuous stack of metal foil layers and imparting a pattern to all layers of the stack to form an advancing stack of patterned and nested metal foil layers; scoring or creasing the advancing stack of patterned and nested metal foil layers across at least a portion of the width of the stack at predetermined intervals; causing the stack of patterned and nested metal foil layers to fold in alternating directions at said scores or creases; and piling the alternately folding stack in a zigzag fashion to form a z-fold pack of the stack of patterned and nested metal foil layers.

As set forth above, Nonnenmann does not teach or suggest scoring or creasing the advancing stack of patterned and nested metal foil layers across at least a portion of the width of the stack at predetermined intervals. Accordingly, Claim 63 should be allowable. Claim 64 is dependent from Claim 63 and should be allowable for the reasons set forth above.

Response to 35 U.S.C. §103(a) Rejections:

Claims 67-69 were rejected under 35 U.S.C. §103(a) as being unpatentable over Shaw (U.S. Patent 4,348,450) in view of Jeffrey (U.S. Patent No. 4,748,792).

Shaw relates to a laminated insulating and packaging material comprised of a metal foil sheet bonded to a non-woven glass fiber paper-like sheet by a latex adhesive which resulting laminate in certain embodiments is bonded to corrugated cardboard to make fire-retardant packing material.

Jeffrey relates to an apparatus for forming and packaging articles of resilent compressible foam material. The individual sheets of foam material are formed and introduced between confronting surfaces of the apparatus. Relative motion between the surfaces cause the sheets to roll upon themselves to form a compressed rolled article. Labels or wrappers are introduced at the trailing end of the sheets whereby the rolled article is compressed and rolled within the labels or wrappers.

Claim 67 recites a method of producing multilayer metal foil parts. The method includes feeding to a parts forming operation a continuous previously patterned multilayer stack of spaced apart metal foil layers from a z-fold pack of a continuous previously patterned multilayer stack of spaced apart metal foil layers; and forming and cutting individual multilayer metal foil parts from said stack of spaced apart metal foil layers.

As set forth by the Examiner, Shaw does not teach or suggest that the material is supplied from a z-fold pack.

Meanwhile, Jeffrey does not teach or suggest feeding to a parts forming operation a continuous previously patterned multilayer stack of spaced apart metal foil layers from a z-

fold pack of previously patterned multilayer stack of spaced apart metal foil layers. In Jeffrey, the foam material is fed from a "reel 10 of stock foam or sponge material in sheet form 12." Col. 5, lines 37-38. Meanwhile, "[l]abel stock, preferably with index markings for label lengths, is shown at 70 in a fan-fold form in a bin 72 from which it is withdrawn by an overhead pair of such rollers 74, 76 of which at least one is driven to withdraw the continuous fan-fold sheet with unfolding thereof in generally conventional manner, i.e., including such other means as are conventional to fan-fold dispensing for example as used in relation to computer printers." Col. 7, line 63 through Col. 8, line 2. Jeffrey, however, does not teach or suggest feeding the stock foam or sponge material 10 from a z-fold. In fact, Jeffrey specifically suggest that only the labels are withdrawn from a fan-fold form. Accordingly, since Shaw in view of Jeffreys does not teach or suggest feeding to a parts forming operation a continuous previously patterned multilayer stack of spaced apart metal foil layers from a z-fold pack of previously patterned multilayer stack of spaced apart metal foil layers, Claims 67 should be allowable. Claims 68 and 69 are dependent from Claim 67 and should also be allowable.

Claims 58, 62 and 65 are rejected under 35 U.S.C. §103(a) as being unpatentable over Nonnenmann (U.S. Patent 4,647,435).

Claims 58 and 62 recite the method according to Claim 54, further comprising combining a fiber layer between two of the metal foil layers; and wherein scoring or creasing is only on a top layer of the continuous stack of spaced apart metal foil layers, respectively. For the reasons set forth above as to Claim 54, Claims 58 and 62 should also be allowable.

Claim 65 recites the method according to Claim 63, further comprising combining a fiber layer between two of the metal foil layers. For the reasons set forth above as to Claim 63, Claim 65 should be allowable.

Claims 59, 66, and 72-76 were rejected under 35 U.S.C. 103(a) as being unpatentable over Nonnemann in view of German Patent No. DE 198 03 837.

German Patent No. DE 198 03 837 relates to a device for folding a stream of material using rotating members having a male and a female positions.

Claim 59 recites the method according to Claim 54, wherein the step of scoring or creasing is performed by a plurality of rotating members having a respective male and female position.

Claim 66 recites the method according to Claim 63, wherein the step of scoring or creasing is performed by rotating members having a respective male and female position.

For the reasons set forth above as to Claims 54 and 63, and since Nonneman does not teach or suggest scoring or creasing the advancing stack of patterned and nested metal foil layers across at least a portion of the width of the stack at predetermined intervals, Claims 59 and 66 should be allowable.

Claim 72 recites a method of producing a multilayer metal foil product. The method includes combining a plurality of previously patterned continuous metal foil layers to form an advancing continuous stack of spaced apart metal foil layers; scoring or creasing the advancing continuous stack of spaced apart metal foil layers across at least a portion of the width of the stack at predetermined intervals wherein the score or crease alternates in a left and a right direction, wherein the scoring or creasing is performed by a plurality of rotating members having a respective male and female positions, and wherein the rotating members are periodically activated and rotated one revolution at predetermined intervals to produce an alternating score or crease across the substantial width of the continuous stack of spaced apart metal foil layers; causing the continuous stack of spaced apart metal foil layers to fold in alternating directions at said scores or creases; and piling the alternately folding stack in a zigzag fashion to form a z-fold pack of the continuous stack of spaced apart metal foil layers.

As set forth above, Nonnenmann does not teach or suggest "scoring or creasing the advancing continuous stack of spaced apart metal foil layers across at least a portion of the width of the stack at predetermined intervals." In Nonnenmann, the sheets 1 and 1' are provided with "openings or cutouts" or "preweakened buckling zones," rather than scoring or creasing the advancing stack. In addition, the preweakened buckling zones are openings or cutouts which would not produce a multilayer metal foil as described by the present invention. The preweakened buckling zones are also randomly positioned and are not at "predetermined intervals" as recited in Claim 72. Accordingly, since Nonnenmann does not teach or suggest scoring or creasing the advancing continuous stack as recited in Claim 72, Claim 72 should be allowable.

Furthermore, German Patent No. DE 198 03 837 does not teach or suggest scoring or creasing the material using rotating members which are periodically activated and rotated at one revolution at predetermined intervals. As shown in DE '837, the rotating members continuously rotate in order to impart a fold into the stream of material. Accordingly, for the reasons set forth above as to Claim 72, and further since DE '837 does not teach or suggest a method of producing a multilayer metal foil product wherein the rotating members are periodically activated and rotated one revolution at predetermined intervals to produce an alternating score or crease across the substantial width of the multilayer stack, Claim 72 should be allowable.

Claims 73-76 are dependent from Claim 72 and should be allowable for the reasons set forth above as to Claim 72.

Claims 70 and 71 are rejected under 35 U.S.C. §103(a) as being unpatentable over Shaw/Jeffrey as applied to Claim 67 above, and further in view of Cunningham et al. (U.S. Patent No. 4,218,962)

Cunningham et al. relates to an apparatus for the formation of a thermal insulation blocks from rolls of fibrous blankets. A sheet of fibrous material from a roll is fed into the folding means of the apparatus to form the blocks of fibrous material. Cunningham et al.,

however, does not teach or suggest the drawing of a continuous previously patterned multilayer stack of spaced apart metal foil layers from a z-fold stack in a horizontal or non-vertical feed to a parts forming operation.

Claims 70 and 71 recite the method according to Claim 67, wherein a draw of the continuous previously patterned multilayer stack of spaced apart metal foil layers from the z-fold stack is horizontal; and wherein a draw of the continuous previously patterned multilayer stack of spaced apart metal foil layers from the z-fold stack is non-vertical, respectively. For the reasons set forth above as to Claim 67, and further since Cunningham does not teach or suggest the drawing of a continuous previously patterned multilayer stack of spaced apart metal foils from a z-fold stack, Claims 70 and 71 should be allowable.

New Claims 77-80:

New Claims 77-80 have been added to further define aspects of the present invention for which Applicants believe are patentable.

Claim 77 recites the method according to Claim 54, wherein the rotating members are stationary, except when they are periodically activated. Claim 78 recites the method according to Claim 77, wherein the rotating members are rotated one revolution at a predetermined interval to produce the alternating score or crease.

Claim 79 recites the method according to Claim 66, wherein the rotating members are stationary, except when they are periodically activated. Claim 80 recites the method according to Claim 79, wherein the rotating members are rotated one revolution at a predetermined interval to produce the alternating score or crease.

German Patent No. DE 198 03 837 does not teach or suggest scoring or creasing the material using rotating members which are periodically activated and rotated at one revolution at predetermined intervals. As shown in DE '837, the rotating members continuously rotate in order to impart a fold into the stream of material. Accordingly, for the reasons set forth above as to Claims 54 and 66, and further since DE '837 does not teach or suggest a method of producing a multilayer metal foil product wherein the rotating

members are periodically activated and rotated one revolution at predetermined intervals to produce an alternating score or crease across the substantial width of the multilayer stack, Claims 77-80 should be allowable.

CONCLUSION

It is respectfully submitted that Claims 1-9, 16-22, 54-80 are presently in condition for immediate allowance, and such action is requested. If, however, any matters remain that could be clarified by Examiner's Amendment, the Examiner is cordially invited to contact the undersigned by telephone at the number below.

Respectfully submitted,

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